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Issued December 3, 1907.

U. S. DEPARTMENT OF AGRICULTURE,
FOREST SERVICE—Circular 119.
GIFFORD PINCHOT, Forester.

(IN COOPERATION WITH THE DEPARTMENT OF COMMERCE AND LABOR,
BUREAU OF THE CENSUS, S. N. D. NORTH, DIRECTOR.)

CONSUMPTION OF TANBARK AND TANNING EXTRACT IN 1906.

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1907

Previous to 1905, statistics upon the production of lumber and timber products were collected by the Bureau of the Census in connection with the decennial and quinquennial censuses of manufactures. To satisfy the urgent demand for more frequent reports on these important products, the Forest Service collected statistics of the production in 1905. In 1906 the Bureau of the Census and the Forest Service arranged to cooperate in the preparation of annual statistics of forest products.

The collection and compilation of the statistics of production in 1906, therefore, have been under the direct supervision of W. M. Steuart, Chief Statistician for Manufactures, and J. E. Whelchel, Expert Chief of Division, on the part of the Bureau of the Census, and R. S. Kellogg, Chief of the Office of Wood Utilization, and H. M. Hale, Forest Assistant, on the part of the Forest Service.

CONSUMPTION OF TANBARK AND TANNING EXTRACT IN 1906.

The consumption of tanbark in 1906 by 617 tanneries was 1,371,342 cords, valued at $12,774,071, which gave to each cord an average value of about $9.30. The principal kinds of bark used were hemlock and oak. Of the total amount about two-thirds was hemlock, while almost all the rest was oak, the quantity of chestnut and unclassified barks being relatively unimportant. The high value for the "All other" item is due to the fact that a large proportion of it is composed of imported barks and woods, the relative values of which are very high. In addition to bark, 658,777 barrels of extract were consumed. This extract was valued at $8,713,322. Both foreign and domestic extract is used. Of domestic extract—that is, extract manufactured from domestic woods and barks—chestnut extract constitutes the largest amount, being double the combined quantity of oak and hemlock extract. Quebracho, an imported wood extract, constituted by far the largest amount of any one kind, exceeding chestnut in quantity by about 10,000 barrels and in value by over $2,500,000. The very high percentage of tannin in this extract accounts for its extensive use and high value. The average price per barrel was highest for quebracho and lowest for chestnut. Quebracho had an average price of $18 per barrel; hemlock, $12.60 per barrel; oak, $9.90 per barrel, and chestnut $9.12 per barrel.

Table 1 summarizes the quantity and value of the tanning materials consumed in 1906. The cord of 2,000 pounds and the barrel of 500 pounds have been adopted as standards, and wherever the quantities are given in cords or barrels the number of pounds can be obtained by making the reduction on this basis.

TABLE 1.—*Quantity and value of tanning materials consumed in 1906.*

Kind.	Bark.		Extract.	
	Quantity.	Value.	Quantity.	Value.
	Cords.	*Dollars.*	*Barrels.*	*Dollars.*
Hemlock	931,152	7,902,393	68,811	846,726
Oak	406,493	4,416,659	60,384	598,299
Chestnut	22,668	168,527	257,069	2,346,884
Quebracho	....	....	267,016	4,817,012
Palmetto	....	....	1,191	14,887
All other	11,029	286,492	4,306	89,514
Total	1,371,342	12,774,071	658,777	8,713,322

TANBARK.

Although the tanning industry is widely distributed over the United States, the greater part of it is carried on in the States of Pennsylvania, New York, Michigan, and Wisconsin. This is shown by Table 2. More than two-thirds of all the bark consumed in 1906 was used in these four States, Pennsylvania using more than any other State. New York ranks second, Michigan third, and Wisconsin fourth. In all these States the consumption exceeds 100,000 cords per year, and they are the only States in which it passes this quantity. Of these four States, the highest average price per cord, $9.36, is in Pennsylvania. The average price in Wisconsin is $8.99; in New York, $7.99, and in Michigan, $7.77. The highest average price per cord of bark for any one State is found in Oregon, $26.66, California ranking next with $20.48. The bark used in the Pacific coast States is obtained chiefly from the tanbark oak of California, a different species from the eastern tanbark oak, which is chestnut oak. The high price of bark on the Pacific coast is due to the scarcity of oak in the West and to the fact that at present the wood of the tree is not fully utilized, but instead is often left in the woods. The lowest average price for bark is found in New Hampshire, at $6.81 per cord, and Vermont, at $7.17 per cord. The quantity of bark consumed in these States, however, is small, so these prices have little effect upon the average for the country. In the States east of the Mississippi River the highest price obtained for oak bark is $13.88 in New Jersey. The next highest prices are found in Indiana, Ohio, and Kentucky. The average price for the United States is $9.32.

TABLE 2.—*Consumption of tanbark, by States, in 1906.*

State.	Oak.			Hemlock.		
	Quantity.	Value.	Average value per cord.	Quantity.	Value.	Average value per cord.
	Cords.	*Dollars.*	*Dollars.*	*Cords.*	*Dollars.*	*Dollars.*
Alabama	1,270	10,235	8.06			
California	40,664	832,731	20.48			
Connecticut	105	945	9.00	650	4,550	7.00
Georgia	3,296	30,074	9.12			
Illinois	3	26	8.67	17,973	166,582	9.27
Indiana	1,885	22,095	11.72	400	4,625	11.56
Kentucky	12,809	125,413	9.79	350	4,025	11.50
Maine				14,870	113,195	7.61
Maryland	8,412	76,535	9.10	1,476	11,302	7.66
Massachusetts	2,782	31,454	11.31	80,778	669,610	8.29
Michigan				133,767	1,039,036	7.77
Minnesota				50	415	8.30
Missouri	1,930	22,196	11.50	1,695	19,380	11.43
New Hampshire				5,853	39,853	6.81
New Jersey	21,547	299,448	13.90	2,503	34,077	13.61
New York	96,328	711,415	7.39	184,319	1,529,872	8.30
North Carolina	42,211	375,711	8.90	655	5,335	8.15
Ohio	6,472	69,910	10.80	8,293	78,910	9.52
Oregon	17,020	473,600	27.83	1,232	12,932	10.50
Pennsylvania	46,542	426,454	9.16	308,715	2,751,878	8.91
Tennessee	29,179	253,914	8.70	2,565	18,740	7.31
Vermont				8,990	64,473	7.17
Virginia	62,114	552,442	8.89	7,025	60,121	8.56
West Virginia	11,748	95,721	8.15	37,303	269,718	7.23
Wisconsin				111,290	1,000,764	8.99
All others	176	6,340	36.02	400	3,000	7.50
Total	406,493	4,416,659	10.87	931,152	7,902,393	8.49

Table 2.—*Consumption of tanbark, by States, in 1906*—Continued.

State.	Chestnut.			All others.			Total.		
	Quantity.	Value.	Average value per cord.	Quantity.	Value.	Average value per cord.	Quantity.	Value.	Average value per cord.
	Cords.	*Dolls.*	*Dolls.*	*Cords.*	*Dolls.*	*Dolls.*	*Cords.*	*Dolls.*	*Dolls.*
Alabama							1,270	10,235	8.06
California							40,664	832,731	20.48
Connecticut							755	5,495	7.28
Georgia	147	977	6.65				3,443	31,051	9.02
Illinois	10	85	8.50				17,986	166,693	9.27
Indiana	1,200	13,300	11.08				3,485	40,020	11.48
Kentucky							13,159	129,438	9.84
Maine							14,870	113,195	7.61
Maryland							9,888	87,837	8.88
Massachusetts	3,744	28,080	7.50				87,304	729,144	8.35
Michigan							133,767	1,039,036	7.77
Minnesota							50	415	8.30
Missouri	675	7,088	10.50				4,300	48,664	11.32
New Hampshire							5,853	39,853	6.81
New Jersey	436	6,231	14.29				24,486	339,756	13.88
New York							280,647	2,241,287	7.99
North Carolina	55	398	7.24				42,921	381,444	8.89
Ohio	4,715	49,410	10.48				19,480	198,230	10.18
Oregon							18,252	486,532	26.66
Pennsylvania	8,241	41,926	5.09	11,029	286,492	25.98	374,527	3,506,750	9.36
Tennessee	53	268	5.06				31,797	272,922	8.58
Vermont							8,990	64,473	7.17
Virginia	1,869	16,847	9.01				71,008	629,410	8.86
West Virginia	1,523	3,917	2.57				50,574	369,356	7.30
Wisconsin							111,290	1,000,764	8.99
All others							576	9,340	16.22
Total	22,668	168,527	7.43	11,029	286,492	25.98	1,371,342	12,774,071	9.32

The quantity of hemlock bark used is more than double that of oak bark. About one-third of it is consumed in the State of Pennsylvania; New York ranks second, Michigan third, and Wisconsin fourth. The highest average price per cord, $13.61, is obtained in New Jersey, while the average price for hemlock bark in the United States is $8.49. It is interesting to note that the bark of the western hemlock is now used for tanning; a short time ago none of this bark was utilized. Oregon reports a consumption of 1,232 cords of hemlock bark, which is unquestionably that of the western hemlock. The value is given as $10.50 per cord. It is a well-known fact that the price of hemlock bark has not advanced as fast as might be expected in spite of the fact that the prices of other tanning materials and lumber have risen rapidly. This may be due to several causes—first, that the production of hemlock lumber, which is accompanied by the production of bark in nearly every State, is still on the increase in the leading States; secondly, the use of extracts, principally quebracho and other imported materials, has tended to make a smaller demand for hemlock bark than would otherwise be the case.

The quantity of chestnut bark consumed is relatively unimportant, amounting to less than 23,000 cords. Pennsylvania, Ohio, and Massachusetts lead in the consumption of this bark. The highest price paid was in New Jersey, $14.29. It will be noticed that the average price is lower than that of either hemlock or oak bark. Under "All others" items there is about 11,000 cords of tanning materials. This consists chiefly of imported materials. They represent in large part the material used by progressive tanners as substitutes for native barks. The high average value shows that they are very rich in tannin; otherwise their use would be unprofitable as compared with native woods at a much lower price.

TANNING EXTRACT.

The use of tanning extract is rapidly growing. In 1900 the amount reported was 64,043 barrels. By 1906 the consumption of extract had increased until its total value was over two-thirds of the value of the tanbark used. This indicates the extent to which extract is supplementing the use of tanbark.

All told, extracts of four kinds are distinguished—oak, hemlock, quebracho, and palmetto. Of these, three are native and one imported. All are products of the forest, although palmetto extract is obtained from the roots rather than from the bark or wood of a tree. In the consumption of oak bark extract Kentucky leads, followed by Ohio, Massachusetts, New Jersey, and Pennsylvania. The average price per barrel is highest in California and lowest in North Carolina. In the consumption of hemlock bark extract, Pennsylvania leads; also in the consumption of bark. More than half of all the hemlock bark extract consumed was used in the State of Pennsylvania; Massachusetts ranks second; New York third.

TABLE 3.—*Consumption of tanning extract, by States, in 1906.*

State.	Oak.			Hemlock.		
	Quantity.	Value.	Average value per barrel.	Quantity.	Value.	Average value per barrel.
	Barrels.	*Dollars.*	*Dollars.*	*Barrels.*	*Dollars.*	*Dollars.*
California	2,781	55,544	19.97	....	....	....
Connecticut	1,378	15,537	11.28	484	6,660	13.76
Delaware	40	513	12.83	36	540	15.00
Georgia	382	4,659	12.20	5	50	10.00
Illinois	340	3,175	9.34	304	4,180	13.75
Indiana	260	2,600	10.00	1,731	21,701	12.54
Kentucky	20,083	168,171	8.37	87	1,250	14.37
Maine	1,600	20,000	12.50	....	....	....
Massachusetts	7,011	77,328	11.03	8,805	116,608	13.24
Michigan	1,732	14,794	8.54	2,296	29,488	12.84
Minnesota	1	10	10.00	70	962	13.74
Missouri	218	2,177	9.99	25	524	20.96
New Hampshire	....	....	....	700	8,750	12.50
New Jersey	6,320	71,435	11.30	150	1,500	10.00
New York	214	2,524	11.79	3,472	41,550	11.97
North Carolina	200	1,600	8.00	6	150	25.00
Ohio	13,429	115,243	8.58	1,078	15,280	14.17
Pennsylvania	3,328	32,422	9.74	48,736	586,874	12.04
Tennessee	1	20	20.00	135	1,586	11.75
Texas	80	1,000	12.50	20	200	10.00
Vermont	40	700	17.50	182	2,209	12.14
West Virginia	222	2,024	9.12	....	....	....
Wisconsin	685	6,220	9.08	489	6,664	13.63
All other	39	603	15.46	....	....	....
Total	60,384	598,299	9.91	68,811	846,726	12.31

TABLE 3.—*Consumption of tanning extract, by States, in 1906*—Continued.

State.	Chestnut.			Quebracho.		
	Quantity.	Value.	Average value per barrel.	Quantity.	Value.	Average value per barrel.
	Barrels.	*Dollars.*	*Dollars.*	*Barrels.*	*Dollars.*	*Dollars.*
Alabama	10,620	79,650	7.50	807	19,396	24.03
California	335	6,376	19.03	606	15,485	25.55
Connecticut				59	998	16.92
Delaware	59	649	11.00	29	713	24.59
Georgia	3,301	31,485	9.54	3,271	78,003	23.85
Illinois	2,105	16,845	8.00	5,026	95,527	19.01
Indiana				820	17,050	20.79
Kentucky	3,298	28,238	8.57	3,309	59,065	17.85
Maine	6,000	60,000	10.00	535	10,025	18.74
Maryland	1,189	11,194	9.41	818	16,824	20.57
Massachusetts	15,713	112,114	7.14	15,904	311,899	19.61
Michigan	25,975	202,775	7.81	7,940	166,272	20.94
Minnesota				100	2,375	23.75
Missouri	1,140	10,605	9.30	2,425	52,315	21.57
New Hampshire				255	4,694	18.41
New Jersey	4,242	42,380	9.99	12,857	214,331	16.67
New York	37,248	370,100	9.94	32,852	507,799	15.47
North Carolina	8,604	71,551	8.32	286	5,955	20.82
Ohio	2,123	21,418	10.09	5,205	111,330	21.39
Oregon				63	1,590	25.24
Pennsylvania	109,944	1,065,368	9.69	160,549	2,888,833	17.99
Tennessee	4,868	38,181	7.85	200	4,325	21.63
Texas				268	6,070	22.65
Vermont				320	4,200	13.13
Virginia	13,245	102,186	7.72	475	9,497	19.99
West Virginia	4,101	40,010	9.76	503	9,972	19.83
Wisconsin	2,959	35,759	12.08	11,491	201,492	17.53
All other				43	977	22.72
Total	257,069	2,346,884	9.13	267,016	4,817,012	18.04

State.	Palmetto.			All other.			Total quantity.	Total value.	Average value per barrel.
	Quantity.	Value.	Average value per barrel.	Quantity.	Value.	Average value per barrel.			
	Bbls.	*Dolls.*	*Dollars.*	*Bbls.*	*Dolls.*	*Dollars.*	*Bbls.*	*Dollars.*	*Dollars.*
Alabama							11,427	99,046	8.67
California				60	1,500	25.00	3,782	78,905	20.86
Connecticut	10	139	13.90	50	1,031	20.62	1,981	24,365	12.30
Delaware	1	15	15.00	426	8,319	19.53	591	10,749	18.19
Georgia							6,959	114,197	16.41
Illinois							7,775	119,727	15.40
Indiana				204	4,590	22.50	3,015	45,941	15.24
Kentucky							26,777	256,724	9.58
Maine							8,135	90,025	11.06
Maryland				60	870	14.50	2,067	28,888	13.98
Massachusetts	1	13	13.00	718	16,459	22.92	48,152	634,421	13.18
Michigan							37,943	413,329	10.89
Minnesota							171	3,347	19.57
Missouri							3,808	65,621	17.23
New Hampshire				392	5,099	13.01	1,347	18,543	13.77
New Jersey	1	14	14.00				23,570	329,660	13.99
New York	90	1,112	12.36	717	16,306	22.74	74,593	939,391	12.59
North Carolina							9,096	79,256	8.71
Ohio	10	200	20.00	90	1,777	19.74	21,935	265,248	12.09
Oregon							63	1,590	25.24
Pennsylvania	149	1,828	12.27	1,212	25,533	21.06	323,918	4,600,858	14.20
Tennessee							5,204	44,112	8.48
Texas				100	2,438	24.38	468	9,708	20.74
Vermont							542	7,109	13.12
Virginia							13,720	111,683	8.14
West Virginia							4,826	52,006	10.78
Wisconsin	929	11,566	12.45	277	5,592	20.19	16,830	267,293	15.88
All other							82	1,580	19.27
Total	1,191	14,887	12.48	4,306	89,514	20.79	658,777	8,713,322	13.22

An extract which is made from both the bark and wood of the chestnut tree is coming into general use, being second only to quebracho in quantity and value. Over 257,000 barrels of chestnut extract were consumed in 1906, and nearly one-half of the total amount was used in the State of Pennsylvania, followed by New York, Michigan, and Massachusetts. These four States consumed by far the greater part of this extract, although both Virginia and Alabama used considerable quantities.

IMPORTS.

The introduction of quebracho extract into the United States as a tanning material is of recent date, and the subsequent increase in its use has been little less than phenomenal. The quantity imported up to the time of the Twelfth Census was comparatively small, and at that time the total value of all the quebracho used in the United States amounted to but $292,133. In 1906 the value of the total quantity used amounted to $4,817,012, and the quantity to over 267,000 barrels. In its consumption of quebracho Pennsylvania ranks first, using more than one-half of the total, followed by New York, Massachusetts, New Jersey, and Wisconsin. The average price per barrel was $18, which, as it will be seen, is much higher than that of either hemlock, oak, or chestnut extract. Palmetto, the roots of which alone are used for tanning, is also shown separately in Table 3. The quantity is very small compared to the total amount, and is therefore relatively unimportant. Under the "All other" items are included a variety of extracts, among which the most important are sumach, gambier, and cutch.

Table 4 summarizes the tanning material imported for the fiscal year 1906. The information is taken from the Annual Report of the Bureau of Statistics of the Department of Commerce and Labor upon the Commerce and Navigation of the United States. Three different materials are distinguished—hemlock bark, mangrove bark, and quebracho. Of these, quebracho is by far the most important, the quantity of mangrove and hemlock bark being relatively unimportant. It will be noticed that quebracho is imported in two distinct forms—as a bark, shown in the first part of the table, the total quantity of which is 87,838 tons, and as an extract, the quantity amounting to 87,980 barrels. In the unmanufactured form—that is, in bales—dry quebracho is admitted free of duty, but after it has been reduced to an extract and is in liquid form, it is subject to duty of one-half cent per pound; consequently a very large part of it comes in unmanufactured. It will be seen that the value of quebracho imported duty free is approximately the same as that which pays duty.

Table 4.—*Tanning material imported, 1906.*

Kind.	Quantity.	Value.
Bark and wood:		
Hemlock bark .... cords..	7,487	$35,861
Mangrove bark .... tons..	5,657	126,278
Quebracho .... do....	87,838	1,198,537
All other	....	101,193
Extract:		
Quebracho .... barrels..	87,980	1,194,949
All other .... do....	798	7,875
Total	....	2,664,693

Approved:
James Wilson,
Secretary of Agriculture.

Washington, D. C., *September 25, 1907.*

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